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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/562,244
Filing Date: December 22, 2005
Appellant(s): AMTMANN ET AL.

Robert Crawford
Reg. No.: 32,122
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 03/22/2010 appealing from the Office action mailed 09/25/2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-11 stand rejected and are presented for appeal.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5,539,394	Cato et al.	07-1996
6,549,536	Pavesi et al.	4-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cato in US 5539394, further in view of Pavesi US 6549536.

Consider claims 1 and 6, a method of placing a transponder in an inventory in a communication station 21, <u>the method comprising: activating</u> an inventory-making

process in the transponder 10 using a process-controlling circuitry 41 configured to control, an inventory-making process for placing the integrated circuit 10 in an inventory in a communication station 21, See Cato Col. 1 l. 15-20; generating a hash value in the transponder, i.e. hashed number, the hash value identifying a part of a distinguishing dataset that is stored in of the transponder, See col. 5 l. 50-55, the distinguishing dataset being characteristic for the transponder; using the hash value, accessing the part of the distinguishing dataset; selecting a transmission parameter from a set of transmission parameters, i.e. time slot that will be used by the tag for the reply from a set of many time slots transmitted by the reader, by using the accessed part from the distinguishing dataset; and using the selected transmission parameter, transmitting an identifying dataset for the transponder to the communication station to place the transponder in the inventory in the communication station, the identifying dataset being is characteristic for the transponder and is intended for the placing of the transponder in an inventory,

Cato discusses a RFID reader is communicating wirelessly with the tags by transmitting an interrogation signal, **Col. 5 l. 20-31**, tag is responding back to the interrogation signal after computing its own time slot, **Col. 9 l. 11-21**, tag receives an acknowledging clear response when the tags time slots matches with the reader's time slot, **Col. 9 l. 22-26, 33-37.**

The invention is accomplished by the reader first broadcasting a set of parameters to all the tags in the read volume. The broadcast initiates a series of time slots with which the reader and the tags get synchronized. Each tag uses the broadcast

parameters, their unique identity, and some or all the data they contain to calculate a time slot, i.e. the claimed parameter, in which it will communicate with the reader. The parameters transmitted from the reader to the tags can be, but are not limited to, a hashing base number (which is the same as the number of time slots), a data field selector, a hashing algorithm identifier, and a command. The individual tag's time slot selection calculation is done based on a hashing algorithm, **Col. 3 l. 31-43.** The base number is used as a divisor to calculate the hashed number. The tag's identification serial number is divided by a divisor (the hashing base number) to produce a remainder (the hashed number) which corresponds to the communication time slot in which the tag will transmit its identification, **Col. 5 l. 50-55.**

Cato teaches that the hashed number which is calculated on the transponder used to determine the time slot used as a reply of that particular transponder, col. 5 l. 50 55. Cato does not discloses an inherent step which is looking up that hashed number in a table or database of transponder's memory from a set of time slots the transponder has received, see col. 3 l. 40, which would corresponds to the identification of the tag. In an analogous art, Pavesi discusses a method of address compression for cell-based and packet-based communication protocols, wherein a space is distributed in equivalent sizes of cells or subspace. Pavesi discusses computing hash value, and the use of hash value to look up data in a hash table, that corresponds to outcoming identifiers.

Pavesi discloses when a packet is received; an equivalent "hash value" is computed quickly from its incoming identifier, i.e. Cato's incoming parameters. This value points to a hash table (named a "slot") that corresponds to one or more out

coming identifiers, i.e. Cato's time slots which are derived from tags identification, and use for the transmission of that identification, **See Pavesi, col. 3 l. 41-44.**

It would have been obvious to an ordinary skilled artisan at the time of invention to modify the invention of Cato, and use the computed hash value to look up tag's time slot that should be used from the set of time slots received to transmits tags identification; therefore, each tag replies back in their computed time slot and thus reduce the chance of collision, **See Pavesi, col. 3 l. 41-44.**

Consider claim 2, a method as claimed in claim 1, characterized in that, in the inventory-making process, a time slot is selected from a time-slot sequence by using the accessed part of the distinguishing dataset, and in that, in the inventory-making process, the identifying dataset for the transponder is transmitted from the transponder to the communication station by using the selected time slot, **Col. 5 l. 50-55.**

Consider claims 3, a method as claimed in claim 1, characterized in that the hash value, i.e. the hashed number, is generated by means of a hash-value counting stage provided in the transponder, **Col. 5 l. 50-55.**

Consider claim 8, a circuit as claimed in claim 6, characterized in that the hash-value generating circuit includes a hash-value counting stage, **See Cato, col. 9 l. 17-21 after calculating its time slot the tag will count time slots until its time slot occurs.**

Consider claims 4 and 9, a method as claimed in claim 3, characterized in that the hash-value counting stage is set to a preset starting hash value after a power-on reset in the transponder.

Tags are powered by radiation from the reader or by any other convenient means, i.e. passive tags, and they will receive their hash base value upon interrogation – when the tags are powered by radiation. After calculating its own time slot, the tag will <u>count</u> time slots until its time slot occurs as set forth graphically in the timing chart of FIG. 4. **Col. 2 l. 53-54, col. 9 l. 17-19.**

Consider claims 5 and 10, a method as claimed in claim 1, characterized in that the hash value is generated by means of a random number generator provided in the transponder.

Efficient hashing operation during read cycles requires matching the algorithm to the encoding of information and selecting the proper <u>randomizing divisor</u> for the sample universe, **Col. 4 l. 11-14**. In order to distribute ASCII nonrandom data smoothly, the hashing algorithm must match the nature of the data. Thus the necessity to <u>vary</u> the hashing algorithm used. Cato does not show a random generator; however, if the base hash value can be the proper randomizing divisor then the reminder hashed value will be a random value. Nevertheless, Cato incorporates by reference, U.S. Pat. No. 4,471,345 describes a tag and portal system for monitoring the whereabouts of people wearing the tags. Up to six tags may be simultaneously interrogated as their holders pass through a doorway. The tags respond to interrogation signals generated by the

portal and their response occurs after a pseudorandom delay. The tag circuit employs a pseudorandom sequence generator. The pseudorandom delay is used to avoid data collisions by the six responding tags.

Consider claim 7, a circuit as claimed in claim 6, characterized in that the transmission-parameter selecting means <u>includes a </u>time-slot selecting <u>stage that is configured </u>to select a time slot from a time-slot sequence, <u>and the transmission circuitry configured to transmit the identifying dataset during the </u>selected time slot from the integrated circuit to the communication station the for the placing of the integrated circuit in an inventory, **See Cato, Col. 3 l. 31-43, Col. 5 l. 50-55. See Cato, col. 9 l. 17-21 after calculating its time slot the tag will count time slots until its time slot occurs and sends its data on the corresponding time slot. See Pavesi, col. 3 l. 41-44.**

Consider claim 11, a transponder, characterized in that the transponder (1) is provided with an integrated circuit as claimed in claim 6. **Col. 4 l. 45,** Transponder 10 is integrated into a chip, a transmission coil 47 is connected to the IC, and See Cato Fig 3 shows an antenna coil 47 connected to the identification chip 10, **col. 4 l. 51.**

The prior art made of record and not relied upon is considered pertinent to Appellant's disclosure.

Mani, Christophe, US 20040012486 A1, See abstract and ¶ 65, the module TAG3 responds to the command PCALL16 by sending a message R(30) as the part ID2 of its <u>identification number is equal to 0 and corresponds to the first time slot</u>.

Bandy, William R. et al. US 6002344 A, See abstract, Each tag increments a first tag count in response to the clock signals, and transmits the Tag ID assigned to the tag when the first tag count corresponds to the Tag ID assigned to the tag, permanent identification number assigned to said each tag corresponds to said time slot number.

(10) Response to Argument

Appellant's is mainly arguing that the cited hashing number of the (Cato) '394 reference does not correspond to Appellant's hash value, which is used to access a part of the distinguishing dataset (e.g., a serial number) with the accessed part then being used to calculate a transmission parameter (e.g., a time slot). Appellant states that the hashing number of the '394 reference is not (and cannot be) used to access a part of a distinguishing dataset stored in a tag, with the accessed part then being used to calculate a transmission parameter, as claimed. Instead, the cited hashing number of the '394 reference calculated in the tag (using a hashing base number) is the time slot in which the tag will transmit. See, e.g., Col. 5:29-55. As such, the hashing number of the '394 reference does not identify a part of the distinguishing dataset that is stored in the tag and the hashing number of the '394 reference is not used to access a part of such a distinguishing dataset, as in the claimed invention. Appellant further states that that the cited portions of the (Pavesi) '536 reference fail to address the shortcomings of the '394 reference. In particular, the '536 reference does not teach generating a hash value in a transponder (as claimed) and, in fact, the '536 reference fails to make any mention of a transponder. See, e.g., Col. 3:41-44.

It is Examiner's interpretation that Cato's transponder is capable of generating the hash value, based on the parameters, and after receiving the parameters from the reader. Cato teaches the available number of time slots is defined in the information transmitted from the reader to the tags. Cato teaches that the hashed number which is calculated on the transponder used to determine the time slot that is and should be used as a reply of that particular transponder, col. 5 l. 50 55. Cato does not discloses an inherent step which is looking up that hashed number, i.e. the calculated time slot, in a table or database of transponder's memory from **a set of time slots the transponder has received**, see col. 3 l. 40, <u>It is Examiner's interpretation that the tag will have to look up which of the many time slots, matches with the computed value, and the tag should use to reply the identification</u>, and the tag will not use more than one available time slot it has received because then the communication will collide with all the other tags.

In an analogous art, Pavesi teaches a method of address compression for cell-based and packet-based communication protocols, wherein a space is distributed in equivalent sizes of cells or subspace. Pavesi discusses computing hash value and use the hash value to look up data in a hash table, and the hash value points to a hash table that corresponds to one or more outcoming identifier. Per KSR this will be simple substitution of one known element for the other in prior art, and one would substitute outcoming identifiers for available time slots. Pavesi's hash table is a set of cell's time slot.

Pavesi discloses when a packet is received; an equivalent "hash value" is

computed quickly from its incoming identifier, i.e. Cato's incoming parameters including a set of time slots. This value points to a hash table (named a "slot") that corresponds to one or more outcoming identifiers, i.e. Cato's time slots, See Pavesi, col. 3 l. 41-44.

An ordinary skilled artisan would know that a semiconductor memory is a static addressable memory, thus it is inherent for a processor to look up the data corresponding to its address. An address pointer, i.e. hashed value, is incremented by a counter until the desire address in found to fetch the data, i.e. a time slot, form that particular memory address. Nonetheless, Pavesi discloses when a packet is received; an equivalent "hash value" is computed quickly from its incoming identifier, i.e. Cato's incoming parameters. This value points to a value in hash table (named a "slot") that corresponds to a out coming identifier, i.e. Cato's time slot that is derived from the parameters and Identifier, See Pavesi, col. 3 l. 41-44.

Appellant argues that cited references are contrary to the requirement of 35 USC 103. Appellant states that the Examiner's error lies in the assertion that the skilled artisan would combine teachings of the '536 reference relating to an IP router with the identification tags of the '394 reference to "reduce the chance of collision." However, no explanation has been provided as to how the proposed combination would function in any manner, much less how to reduce such a chance. Such a vague reference to a hypothetical combination, for which no explanation is presented by the Examiner, does not provide a clearly-articulated reason that would be consistent with the M.P.E.P. and relevant law (see, e.g., KSR at 418-419).

It is Examiner's interpretation that, in order to establish errorless communication between tags and the reader the tags shall response in their assigned time slots. This will avoid multiple reads and collision of multiple responses in a single slot.

Secondary reference teaches a method of address compression for cell-based and packet-based communication protocols, wherein a space is distributed in equivalent sizes of cells or subspace. Pavesi discusses the use of hash value to look up data in a hash table, and to compute hash value to look up outcoming identifiers.

It is clear that both references are discussing electronic communications. Examiner relied on Pavesi to show how the computed hash value is used as an address pointer.

Therefore, it would have been obvious to an ordinary skilled artisan at the time of invention to modify the invention of Cato, and use the computed hash value to look up tag's time slot that should be used from the set of time slots received to transmits tags identification; therefore, each tag replies back in their computed time slot and thus reduce the chance of collision, **See Pavesi, col. 3 l. 41-44.**

KSR's simple substitution can also be used to make the case of obviousness. If we find that the prior art, Cato contained a device which differed from the claimed device by the substitution of some component. We find that the substituted components, i.e. available time slots, and their functions, i.e. use of time slot for a tag to respond, were known in the art. We find that one of ordinary skill could have substituted one known element, i.e. outcoming identifiers of Pavesi, for another, i.e. available time slots of Cato in a table, and the results of the substitution would have been predictable.

Therefore, per KSR this will be simple substitution of one known element for the other in prior art for the other, and one would substitute outcoming identifiers of Pavesi, i.e. a known element in prior art, for available time slots of Cato, what are also known in the prior art. Pavesi's hash table is a set of cell's time slot, where in the communication space is divided into cells.

Appellant argues that the primary reference teaches away from the claimed invention. Appellant argues that Cato '394 reference divides the tag's serial number by a hashing base number (provided by the reader) to determine a hashing number, which is the time slot in which the tag will transmit its serial number to the reader. See, e.g., Col. 5:48-55. As the tag of the '394 reference has already determined its time slot, the '394 reference teaches away from the additional steps of using the hashing number to access a part of a distinguishing dataset stored in the tag and then using the accessed part to calculate a time slot for the tag. Appellant submits that the skilled artisan would not add these additional unnecessary steps to the '394 reference because the '394 reference has already determined the tag's time slot.

It is examiner interpretation that it is obvious that one would want to make sure that the computed time slot is one of the available time slots. As Cato teaches, in case of a collision reader can generated and transmit a new series of time slots, see col. 8 l. 24-45. Therefore it is obvious that the reader does not want the tag to transmit in a previously calculated time slot or wrongly calculated time slot. Therefore, in view of

Pavesi, one would make sure in a hash table that the calculated time is one of the time slots transmitted from the reader.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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